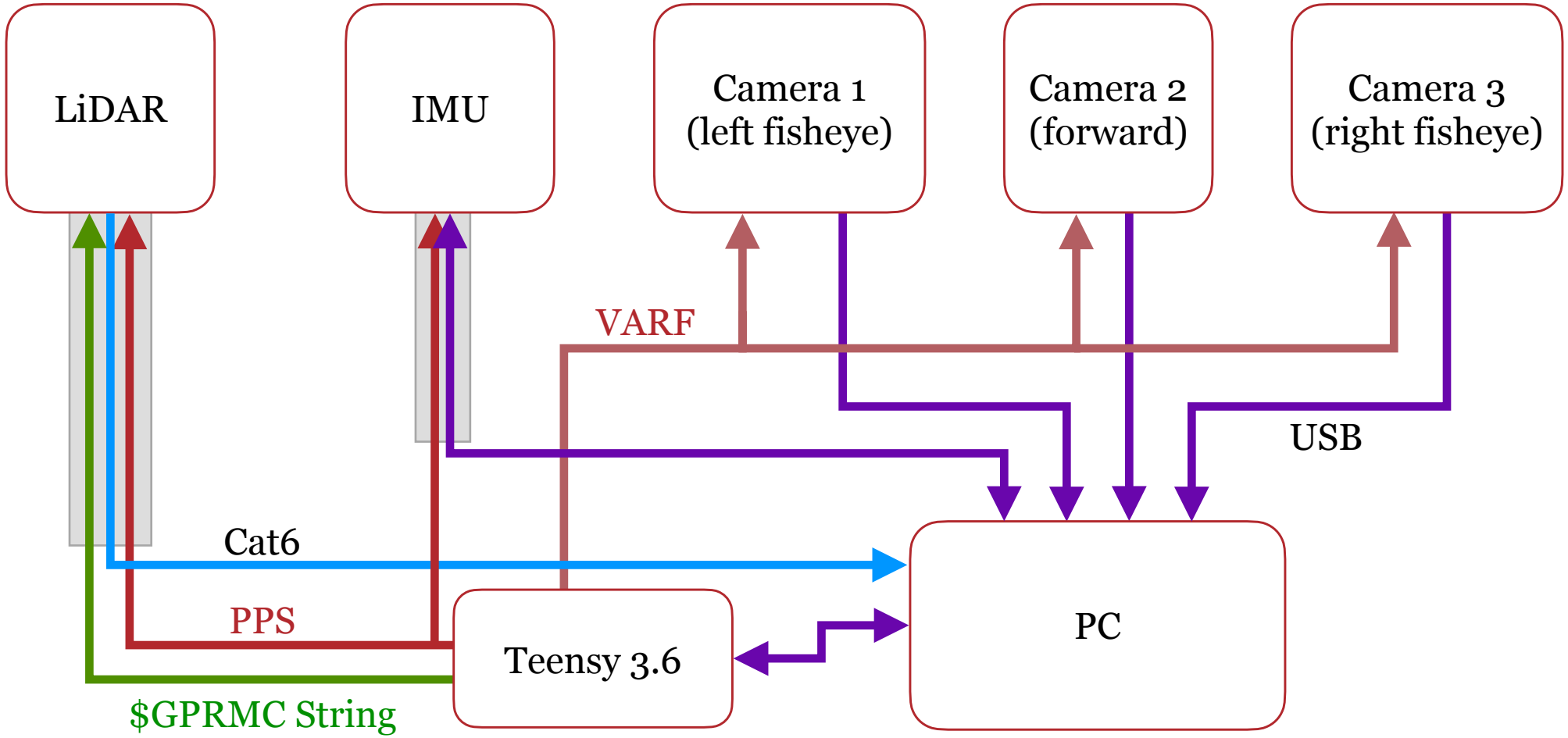
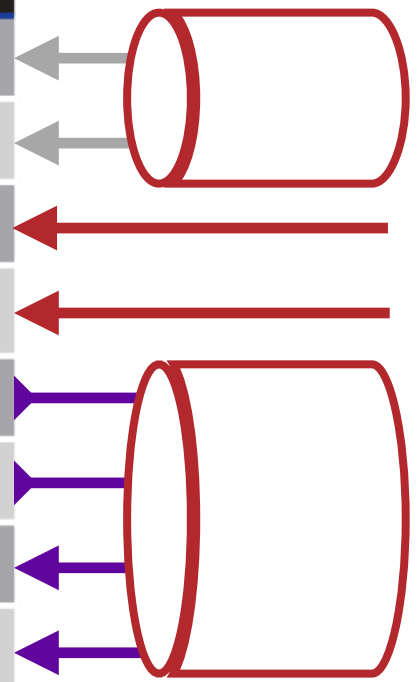
MICROCONTROLLER SCHEME



LIDAR

Wire	Signal	Input/Output	Specifications
Black	Ground	Input	System Ground
Red	Power	Input	9-18 V_{DC} / 12 W
Yellow	GPS Sync Pulse	Input	0 to 15 V
White	GPS Serial Receive	Input	0 to 15 V
Light Orange	Ethernet TX+	Output	Differential
Orange	Ethernet TX-	Output	Differential
Light Blue	Ethernet RX+	Input	Differential
Blue	Ethernet RX-	Input	Differential



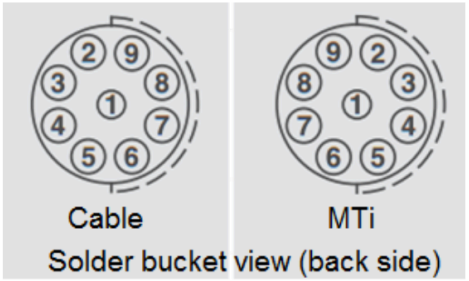
From power supply

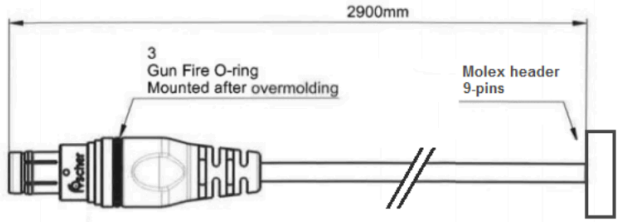
PPS from Teensy

$GPRMC message from Teensy

Ethernet to PC

IMU





Functionality	Wire colour CA-MP2	Wire gauge	Fischer pin no.	Molex header pin no.
GND	Black	AWG28	1	2
RS232 TxD / RS485 TxD/RxD- / RS422 TxD-	Yellow	AWG28	2	4
RS232 RxD / RS485 TxD/RxD+ / RS422 TxD+	Grey	AWG28	3	5
Vin (4.5-30V)	Red	AWG28	4	1
SyncIn[11]	Blue	AWG28	5	7
SyncOut	Pink	AWG28	6	9
ClockSync	Brown	AWG28	7	8
USB DP (D+) / RS422 RxD+	Green	AWG28	8	3
USB DM (D-) / RS422 RxD-	White	AWG28	9	6
Shielding	SH	N/A	SH	N/A

PC USB GND or LiDAR power supply

N/C

N/C

From PC USB (5V) or LiDAR power supply

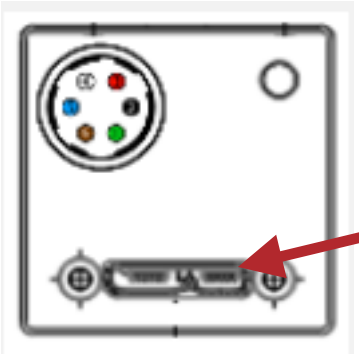
N/C

PPS to LiDAR or VARF trigger to cameras

N/C

To/From PC

CAMERAS



USB3 to PC

Diagram	Color	Pin	Line	Function	Description
	Green	1	3	Power / Input	+12 V DC Camera Power / Non-isolated input
	Black	**2**	**0**	**Opto Input 1**	**Opto-isolated input**
	Red	3	2	NC / +3.3 V / GPIO	+3.3 V output. Current 120 mA (nominal) Firmware enabled / Non-isolated I/O
	White	4	1	Opto Output 1	Opto-isolated output
	Blue	**5**	**N/A**	**Opto GND**	**Ground for opto-isolated I/O, not connected to camera ground**
	Brown	6	N/A	GND	DC camera power ground

VARF from IMU

System digital GND